

The Knowledge Bank at The Ohio State University
Ohio State Engineer

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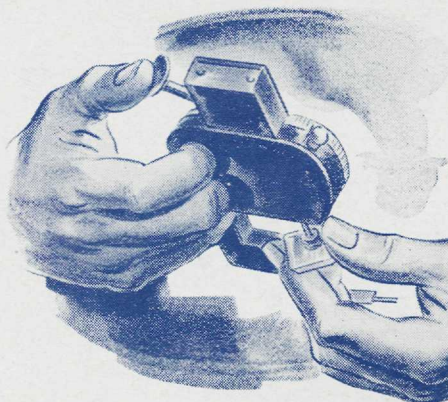
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"The next number will be
free with 6 box tops, followed
by occasional showers"



Doubletalk? No, it's how radio would sound if stations couldn't be kept on their assigned frequencies. The problem was licked once and for all when engineers discovered how to regulate radio frequencies with a tiny disc of quartz crystal, the thickness of which governs the length of the waves. Precision cutting, grinding and finishing of the quartz, a process Carborundum helped pioneer, makes today's accurate control possible.

No larger than a thumb nail, only about 1/16th inch thick, these oscillators must be finished to limits as close as 1/100th the diameter of a hair. With the aid of Carborundum Brand Abrasive Grains and Powders, the discs are made with optically flat and parallel surfaces, and thickness so accurate it must be measured in terms of light wave length.



In the development of many modern aids to living, abrasives have played a vital part. And Carborundum skill and knowledge have made much of this progress possible. These facilities will be at your disposal no matter what industry you go into. The Carborundum Company, Niagara Falls, New York.

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G-E Campus News



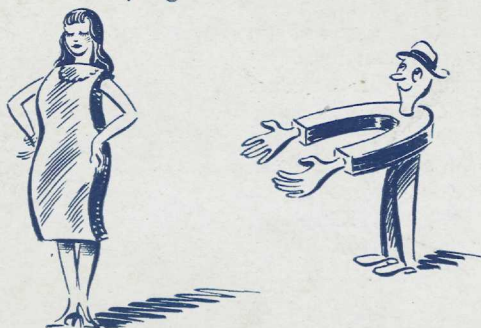
IDEA MARKET

"A PENNY for your thoughts" is dirt cheap!

Last year the General Electric Company paid \$95,203 to its employees for some 12,453 suggestions for more efficient ways of doing things; in the past 20 years General Electric employees have converted thoughts into \$1,100,000 worth of suggestions.

Many of last year's suggestions were ideas for speeding up war production. For example, one young man's idea for a better method of manufacturing radio equipment brought him \$800; another employee received an award for his ingenious device which cuts in half the time required for a vital step in building propulsion equipment for warships.

Some of the Company's most economical methods of operation have evolved from this practice of "buying ideas."



A CHANGE OF HEART

DR. UHLIG, a scientist in the G-E Research Laboratory, can make a piece of stainless steel change its mind in truly feminine fashion.

The metal Dr. Uhlig uses pays no attention whatever at first when it is placed close to a powerful alnico magnet. Then, like a woman who has a sudden change of heart, it suddenly flies to the arms of the waiting magnet.

The scientific explanation is that a delayed change takes place in the steel's atomic arrangement. Dr. Uhlig heats a strip of the metal to 1100 F, at which temperature it is nonmagnetic, and then suddenly cools it. The atoms start rearranging themselves when the metal is cooled, but it takes about a minute and a half before the majority are shifted and at least a day before they all reach a state of equilibrium.



COME AND GET IT....

AND when the boys come and get it today, they find "Iron Rations" safeguarded by electronics, a science now used to inspect much of the steel going into tin cans that produce many a "mess." (Actually these *tin* cans are made of sheet steel, with a thin coating of tin.)

Sheet steel races from processing machines at speeds up to 1000 feet a minute, and the human eye can not detect tiny pin holes that may cause spoilage. Two electronic devices, however, do the job: one discovers holes as tiny as 1/100 of an inch in diameter; the other marks the flaw for removal before the sheet becomes a container.

Just before the strip of steel enters the leveller rolls, it passes through a slotted scanner head. Light projected downward pierces through any pin holes and operates photoelectric tubes in the bottom half of the head. These tubes, through an amplifier, operate a mechanism which diverts faulty sections from the production line.

Thus the science of electronics is helping to look after that stomach on which an army is supposed to travel.

GENERAL  **ELECTRIC**